

(c) Application Rates.

TEMPORARY SEEDING		
MATERIAL	LB PER 1000 FT ²	LB PER ACRE
Temporary Seed Mix	2.9	125
Fertilizer (10-20-10)	17.2	750
Mulch (Straw or Hay)	91.8	4000
Wood Cellulose Fiber (Mulch Binder)	17.2	750

704.03.02 Temporary Wood Cellulose Mulching. Temporary wood cellulose mulching shall consist of applying wood cellulose fiber to those areas that will be disturbed in less than one month.

- (a) Soil Preparation.** Soil shall be left in the condition from the grading operation.
- (b) Mulching.** Wood cellulose fiber shall be mixed with water in a hydroseeder and applied uniformly. Temporary wood cellulose mulching shall consist of wood cellulose fiber applied at the rate of 34.4 to 45.8 lb per 1000 ft² or 1500 to 2000 lb per acre.

704.04 MEASUREMENT AND PAYMENT. The payment will be full compensation for all material, labor, equipment, tools, and incidentals necessary to complete the work. Repairs due to the Contractor's negligence as determined by the Engineer shall be done at no additional expense to the Administration. After acceptance, mulch requiring replacement, as directed by the Engineer, will be paid for as additional work.

704.04.01 Temporary Seeding will be measured and paid for at the Contract unit price per pound of seed.

704.04.02 Temporary Wood Cellulose Mulching will be measured and paid for at the Contract unit price per ton of wood cellulose fiber.

SECTION 705 — TURF ESTABLISHMENT

705.01 DESCRIPTION. This work shall consist of soil preparation, seeding, fertilizing, liming as required, mulching, overseeding, refertilizing, and mowing all areas designated for turf establishment as specified in the Contract Documents or as directed by the Engineer.

705.01.01 Regional Areas. Maryland is divided into regions by counties as follows:

REGION 1 — Garrett, Allegany and Washington (West of Clear Spring, MD);

REGION 2 — Washington (East of Clear Spring, MD), Frederick, Carroll, Baltimore, Harford, Cecil, Howard, Montgomery, and Baltimore City.

REGION 3 — Anne Arundel, Prince Georges, Calvert, Charles, St. Marys, Kent, Queen Anne's, Talbot, Caroline, Dorchester, Wicomico, Worcester and Somerset.

705.01.02 Seeding Seasons and Seed Mixes.

SEEDING SEASONS AND SEED MIXES						
REGIONS	SPRING AND FALL MONTH/DAY		SUMMER MONTH/DAY		LATE FALL MONTH/DAY	
1	4/1 to 6/15 and 8/1 to 10/1		6/16 to 7/31		10/2 to 11/1	
2	3/1 to 5/15 and 8/1 to 10/20		5/16 to 7/31		10/21 to 11/20	
3	3/3 to 5/1 and 8/1 to 10/31		5/2 to 7/31		11/1 to 11/30	
REGIONS	ROADSIDES SEED MIX WITH ADDITIVE	MEDIANS SEED MIX	ROADSIDES SEED MIX WITH ADDITIVE	MEDIANS SEED MIX WITH ADDITIVE	ROADSIDES SEED MIX WITH ADDITIVE	MEDIANS SEED MIX WITH ADDITIVE
1	1c	2	1ac	2a	1bc	2b
2	1c	2	1ac	2a	1bc	2b
3	1c	1	1ac	1a	1bc	1b
Seed Mix contents refer to 920.04.02 1 = SHA Seed Mix No.1 2 = SHA Seed Mix No.2				ADDITIVES a = Lovegrass or Foxtail Millet b = Rye Grain c = Serecia Lespedeza		

NOTE: All regions shall have Serecia Lespedeza added to the seed mixes which are to be sown on ripplable rock.

Roadside areas are outside the edge of the roadbed, interchanges, and median areas with a slope of 3:1 and steeper.

Median areas are between divided highways flatter than 3:1 and at Administration facilities.

705.02 MATERIALS.

Mulch Binder
Agricultural Limestone

904.03 or 920.05.04
920.02

Fertilizer	920.03.01
Seed	920.04.01 and 920.04.02
Mulch	920.05.03 and 920.05.04
Miscellaneous	920.08

705.03 CONSTRUCTION. Seeding shall be performed when the temperature is above 32 F and the ground is not frozen.

705.03.01 Seeding Roadside Areas. Seeding shall consist of soil preparation, liming, seeding, fertilizing, and applying and securing mulch.

- (a) **Preparing Soil.** Areas to be seeded shall conform to the specified finish grades and be free of any weed or plant growth. All areas (except serrated cut slopes) shall be loosened by discing, harrowing, raking or by other approved methods immediately prior to seeding, unless otherwise directed by the Engineer. The area shall be free of all clods, stones and other foreign materials larger than 3 in. On and adjacent to commercial and residential properties, the size of stones and other foreign material shall not be larger than 1-1/2 in. All gullies, washes or disturbed areas that develop subsequent to final dressing shall be repaired prior to seeding. On slopes less than 3:1 and on flat areas, the final seedbed shall be prepared so there is an even and uniform germination of seed and final stand of turf. To conserve moisture, a cultipacker may be run over the seedbed before or after seeding, but before mulching. The seed beds shall be as follows:

- (1) Slopes less than 3:1:

The topsoil shall be loosened to a depth of 2 in. and all track marks shall be removed.

- (2) Slopes 3:1 and steeper:

The subsoil shall be loosened to a depth of 1 in.

- (3) Serrated cut slopes:

The subsoil shall not be loosened. The areas shall be seeded and mulched in 50 ft maximum vertical increments.

- (b) **Application Equipment.** Equipment shall consist of spreaders, drills, hydroseeders or other equipment approved by the Engineer for applying materials either in a wet or dry form. All equipment shall be calibrated before application to the satisfaction of the

Engineer so that materials are applied accurately and evenly to avoid misses and overlaps.

Hydroseeders shall display maximum capacity in gallons and be equipped with an agitation system capable of keeping all the solids in a state of suspension.

The mixture shall be directed upward into the air so droplets will fall in a uniform spray to avoid erosion or runoff.

Mechanical seeders shall be capable of placing seed at the specified rate.

Use of hydroseeders and spinner spreaders is prohibited during periods of high winds when the materials could land on sensitive areas or on sensitive structures.

(c) Application Rates.

MATERIAL	LB PER ACRE
AGRICULTURAL LIMESTONE (1) Salvaged Topsoil Areas (2) Furnished Topsoil Areas (3) Nontopsoil Areas and Serrated Cut Slopes Region 1 Limestone Region 2 Limestone Region 3 Dolomitic Limestone	Refer to Contract Documents. Refer to Soil Reports 6000 5000 4000
Seed Mix No. 1 Roadside Areas Areas flatter than 2:1 Areas 2:1 and steeper with legumes	100 75
Seed Mix No. 1 or No. 2 Median Areas	100
Serecia Lespedeza	20
Lovegrass	2
Foxtail Millet	10
Rye Grain	22
FERTILIZER AT SEEDING Topsoiled and Nontopsoiled Areas 10-22-22 (50% UF N ₂) Nontopsoiled Areas 38-0-0 (UF)	1000 200
REFERTILIZING Topsoiled Areas 0-20-20 38-0-0 (UF) Nontopsoiled Areas 0-20-20 38-0-0 (UF)	100 400 400 600
MULCH (1) Straw or Hay (a) Secured with Wood Cellulose Fiber (b) Secured with Mulch Anchoring Tool (c) Secured with Tracking Method (2) Wood Cellulose Fiber	4000 5000 3000 1500
MULCH BINDER Wood Cellulose Fiber	750

UF = Ureaform

N₂ = Nitrogen

(d) Liming. Agricultural limestone where required on topsoiled areas flatter than 3:1, shall be incorporated 2 in. into the topsoil before seed and fertilizer are applied. Agricultural limestone where required on all areas 3:1 and steeper, may be mixed with the seed and fertilizer.

(e) Seeding and Fertilizing. Seed and fertilizer shall only be applied to previously prepared seedbeds.

When seed is applied with hydraulic seeders, all mixtures shall be used within eight hours after mixing.

When seed is sown with mechanical seeders, seed and fertilizer shall be incorporated to a depth not more than 1/4 in.

All leguminous seeds shall be inoculated as specified on the inoculant package label. The inoculant shall be stored at room temperatures, out of direct sunlight and away from heating units.

When leguminous seed is sown by hydraulic seeders, 10 times the quantity of inoculant required for dry leguminous seed application shall be used. Seed not used within one hour shall be reinoculated.

When leguminous seed is sown by mechanical seeders, the seed shall be dampened with water and mixed with the inoculant. The inoculated seed shall then be mixed with the other seed to be used. Inoculated seed not used within 24 hours shall be reinoculated.

(f) **Mulching.** Within 48 hours after seeding, mulch shall be applied as follows:

(1) **Straw or Hay Mulch.** Material shall be applied so no more than 10 percent of the soil surface is exposed. Mulch applied by blowers shall provide a loose depth of 1/2 in. to 2 in. The length of 95 percent of the mulch shall be 6 in. or more in length. Mulch applied by hand shall provide a loose depth of 1-1/2 in. to 3 in.

(2) **Wood Cellulose Fiber Mulch.** Wood cellulose fiber will only be permitted on those areas where steep or high slopes prohibit the use of straw or hay application equipment or when approved by the Engineer. During summer seeding at least 70 percent of the hydromulch shall be applied after and separately from the seed and fertilizer.

(g) **Securing Straw or Hay Mulch.** Mulch shall be secured by any of the following methods:

(1) **Mulch Anchoring Tool Method.** This method shall be used for the summer seeding season on slopes 3:1 and flatter and all median areas on highways under traffic. Mulch shall be incorporated into the soil to a minimum depth of 2 in.

(2) **Tracking Method.** The mulch shall be incorporated into the soil with track type equipment having steel cleats with a minimum depth of 1-1/2 in. The tracking shall be performed perpendicular to the slopes. The equipment used and the method of tracking shall be acceptable to the Engineer. Upon completion of tracking, the mulch shall be further secured as described for the mulch binding method in 705.03.01(g)(3).

(3) **Mulch Binding Method.** Mulch binder material shall be uniformly applied without displacing the mulch.

705.03.02 Seeding Median Areas. Seeding shall consist of soil preparation, liming, seeding, fertilizing, and applying and securing mulch in conformance with 705.03.01 with the following exceptions:

- (a) The soil shall be loosened to a depth of 3 in.
- (b) Agricultural limestone, if required, shall be applied separately and incorporated 3 in. into the seedbed.

705.03.03 Nontopsoiled Areas. All nontopsoiled areas to be seeded shall have limestone and 38-0-0 (UF) fertilizer applied.

705.03.04 Overseeding. Overseeding roadside and median areas consists of applying seed and fertilizer to previously seeded and mulched areas where turf establishment has not been successful and where remulching is not required due to mulch remaining from the previous mulch application. Work shall be as directed by the Engineer and conform to 705.03.01 for roadside areas and to 705.03.02 for median areas. Soil preparation and mulch will not be required.

705.03.05 Refertilizing. Refertilizing shall consist of applying 0-20-20 and 38-0-0 (UF) fertilizer to topsoiled, nontopsoiled and serrated cut slope areas and other areas as directed by the Engineer as follows:

AREAS	REGIONS	NUMBER OF APPLICATIONS	MONTHS/WEEKS AFTER SEEDING
Topsoiled	1 and 2	1	4 to 6 weeks
Nontopsoiled and serrated cut slopes	1 and 2	1	April or September
	3	2	April and September

705.03.06 Tractor Mowing. Mowing shall consist of using a minimum 5 ft flail or rotary tractor mower as directed by the Engineer, and shall

conform to the Administration's Mowing Guidelines. The vegetation shall be cut to 5 in. high before it reaches 20 in. high.

705.03.07 Hand Mowing. Mowing shall consist of using a minimum 19 in. hand mower as directed by the Engineer. Vegetation shall be cut to 3 to 4 in. high before it reaches 15 in. high.

705.03.08 Repairing Damaged Areas. Before final acceptance, the Contractor shall repair or replace any seeding or mulching that is defective or damaged due to the Contractor's negligence at no additional cost to the Administration. When the Contractor elects to perform out of season work, the Contractor shall establish a good stand of grass of uniform color and density as approved by the Engineer. When it is not possible to make an adequate determination of the color, density and uniformity of the stand of grass, acceptance of the areas will be delayed until seeding requirements are in conformance.

705.04 MEASUREMENT AND PAYMENT. Turf Establishment will be measured and paid for at the Contract unit price for the items as specified in the Contract Documents. The payment will be full compensation for all material, labor, equipment, tools, and incidentals necessary to complete the work.

705.04.01 Seeding Roadside Areas per square yard. Other seed such as leguminous and out of season seed will not be measured but the cost will be incidental to this item.

705.04.02 Seeding Median Areas per square yard. Other seed such as leguminous and out of season seed will not be measured but the cost will be incidental to this item.

705.04.03 Liming Nontopsoiled Areas per ton.

705.04.04 Applying 38-0-0 (UF) Fertilizer per pound.

705.04.05 Overseeding Roadside Areas per pound of seed.

705.04.06 Overseeding Median Areas per pound of seed.

705.04.07 Refertilizing Topsoiled Areas and Refertilizing Nontopsoiled Areas [0-20-20 and 38-0-0 (UF)] per pound for the combined weight of both fertilizers.

705.04.08 Tractor Mowing per hour.

705.04.09 Hand Mowing per hour.

705.04.10 Repairing Damaged Areas. Except when the defect or damage is due to the Contractor's negligence, once the Contractor has completed the seeding and mulching of any area as determined by the Engineer, no additional work at the Contractor's expense will be required. Subsequent repairs and replacements as required by the Engineer shall be made by the Contractor and will be paid for as additional work.

SECTION 706 — WOODY SHRUB SEEDING

706.01 DESCRIPTION. This work shall consist of soil preparation, seeding, fertilizing, mulching, liming as required and refertilizing all areas designated for woody shrub seeding as specified in the Contract Documents, Section 705, or as directed by the Engineer.

706.01.01 Seeding Season. Seeding shall be done during any seeding season specified in 705.01.02.

706.02 MATERIALS.

Mulch Binder	904.03 and 920.05.04
Agricultural Limestone	920.02
Fertilizer	920.03.01
Seed	920.04.01, 920.04.02(d) and (e)
Mulch	920.05.03
Water	920.08.01

706.03 CONSTRUCTION. Refer to 705.03.

706.03.01 Seeding. Seeding shall consist of soil preparation, liming, seeding, fertilizer and applying and securing mulch in conformance with 705.03.01 with the following exceptions:

- (a) **Cover Companion Seed Mix.** The contractor shall provide the cover companion seed mix.
- (b) **Woody Seed Mix.** The Administration will provide the woody seed mix.